Office Action Summary	Application No.	Applicant(s)	
	09/842,915	NAKAMURA, SHIGENOBU	
	Examiner	Art Unit	
	Burton S. Mullins	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-8 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20* is/are allowed.

6)☒ Claim(s) *1 and 4-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *13* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 17 January 2003 has been considered by the examiner.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 4-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 4-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreuzer (WO 92/06527) in view of Dickerson (US 4,541,575). Kreuzer teaches a stator of an AC generator (Fig.1) comprising: a laminated stator core 11 with plural slots 12; a poly-phase winding disposed in the slots comprising plural sub-winding sets (U, X), each sub-winding set comprising plural phase windings formed in U-shaped conductor bars including straight portions 14c disposed in the slots (Figs.2&3) and turn portions (generally denoted at 14b) connecting the straight portions; and connecting portions 18 on the outside of the stator core connecting the phase windings of the same phase (Fig.2). Each turn portion 14b connects a pair of straight portions 14c spaced by a predetermined pole pitch (see Fig.2), in adjacent positions in a corresponding slot. The straight portions are radially-adjacent, as seen in Fig.2.

Further, the turn portions 14b are formed so that the straight portions 14c disposed radially adjacent in the same slot are connected to turn portions extending in opposite directions (compare direction of dashed (radially-inner) with solid (radially-outer) slot winding portions in Fig.2).

Kreuzer differs in that each phase winding comprises U-shaped conductor bars with ends 14a that are welded together to form the winding, not a "continuous wire."

Dickerson teaches a winding technique in a multi-phase AC machine in which each phase of the multi-phase winding comprises a continuous winding (abstract, lines 8-10; Fig.1). This eliminates the need for interconnections required between the coils (c.2, lines 25-27).

It would have been obvious at the time of the invention to modify Kreuzer and provide a continuous winding per Dickerson since this would have been desirable to eliminate the need for interconnection between the coils.

Regarding claim 5, note in Dickerson the A-phase starting point 21 and ending point 53 (Fig.1) and similar starting- and ending-points for the other phases.

Regarding claim 7, note the circumferentially-adjacent winding portions in the slots in Kreuzer (Fig.2), i.e., the winding bars are packed in pairs.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being obvious over Kreuzer and Dickerson as applied to claim 1 above, further in view of Umeda et al. (US 5,955,810).

Kreuzer and Dickerson do not teach a round conductor cross section, per se.

Umeda '810 teaches an alternator and continuous conductor wire (Fig.2) with round cross-section. Round cross-sectional wire changes the coil end characteristics (c.3, lines 1-10).

When the conductor has round cross section, the coil end thickness corresponds to the diameter of the wire.

It would have been obvious to one having ordinary skill to modify Kreuzer and Dickerson and provide a round cross-section for the conductor wire as in Umeda '810 since it would have been desirable to change to coil end thickness.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over Kreuzer and Dickerson as applied to claim 1 above, further in view of Umeda et al. (US 5,998,903). Kreuzer and Dickerson do not teach sizes of the slot and teeth, per se.

Umeda '903 teaches an alternator wherein the stator pole teeth are wider than the slot teeth so that the electrical conductors in the slot can be pushed more deeply in the radial direction when the teeth are plastically deformed, thereby realizing a higher space factor (c.9, lines 52-61).

It would have been obvious to one having ordinary skill to modify Kreuzer and Dickerson and provide teeth wider than the slots per Umeda '903 since this would have been desirable to improve the space factor.

Allowable Subject Matter

7. Claim 20 is allowed. The prior art, in particular Kruezer and Dickerson, do not teach the claimed rotary electric machine structure with continuous windings comprising radially-adjacent, straight-portion phase winding sections disposed in slots including, inter alia, turn portions having a center portion twisted in a radial direction to provide a radial step and a pair of half portions shifted a predetermined radial distance at the center portion, wherein the half

portion of the phase winding located on a radial inner layer crosses the half portion of the other one of the phase windings located on a radial outer layer.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.

Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
February 28, 2003